

MONADNOCK PAPER MILLS, INC.

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May 29, 2014

Debra A. Howland
Executive Director
New Hampshire Public Utilities Commission
21 South Fruit Street, Suite 10
Concord, NH 03301-2429
Executive.director@puc.nh.gov

#PUC 2/JUN/21/14 12:42

**Re: Monadnock Paper Mills, Inc., Applications for Certification as a Class
IV REC Eligible Facility
DE 14-088 Pierce Dam
DE 14-089 Paper Mill Dam
DE 14-090 Monadnock Power Station Dam**

Dear Executive Director Howland,

Hydro Management Group, LLC as aggregator and agent for Monadnock Paper Mills Inc. is pleased to submit the following responses to the Commission's requests for additional information received via letter dated May 15, 2014 regarding Monadnock Paper Mills Inc.'s applications for qualification of its Pierce Dam, Paper Mill Dam and Monadnock Power Station Dam hydroelectric facilities as NH Class IV REC eligible facilities.

(1) Please describe in detail how each of the power stations is operated separately and independently from the others, including information responsive to the following:

(a) Please provide simple diagrams, including a current electrical one-line diagram, of the configuration of each Power Station, and its relation to the other Power Stations;

Please see Appendix 1(a)

(b) Does each Power Station have a separate control room and separate operational personnel? If so, please describe and identify the separate items. If not, please describe how the three Power Stations are jointly controlled and operated

Yes, each power station has a separate control room. Four

electricians are employed by Monadnock Paper Mills, Inc. to operate the three facilities. It is not possible to control all of the Power Stations from a single location. Each station is controlled by equipment at each respective station. No station has any control mechanisms for any other station. A description of the contents of each facility's powerhouse and control room follows:

- (i) Pierce Power Station contains two turbines and generators. One is a 53" Leffel Type F vertical turbine direct connected to a 150 rpm 550 KVA Westinghouse 3 phase 60 cycle 2300 volt synchronous generator rated at 670 hp. Also present is a 35" Leffel Type F vertical turbine connected to a 225 rpm 3 phase 60 cycle 2300 volt synchronous generator rated at 310 hp and 220 KVA. A control room within the Pierce Power Station powerhouse contains the electrical equipment to control the gates and blade positions of each turbine.**

- (ii) Paper Mill Dam contains a 43" Rodney Hunt Hi-test Type 60 double horizontal turbine direct connected to a 180 rpm 750 KVA 1000 hp electric motor 3 phase 60 cycle 2300 volt synchronous generator. A control room within the Mill building contains the electrical equipment to control the gates and blade positions of the turbine.**

- (iii) Monadnock Power Station Dam contains two turbines and associated generators: One 27" Leffel Z vertical turbine direct connected to a 180 rpm Westinghouse 3 phase 60 cycle 2300 volt synchronous generator rated at 146 hp and 125 KVA; and one Dominion vertical fixed blade wicket gate propeller turbine direct connected to a 257 rpm Westinghouse 3 phase 60 cycle 2300 volt synchronous generator rated at 400 hp and 300 KVA. A control room within the Monadnock Power Station powerhouse contains the electrical equipment to control the gates and blade positions of each turbine.**

(c) Can the water flows for each of the three dams be separately

controlled from the water flows for the other dams? If so, please describe these separate controls, both through narrative and using a simple diagram. If not, please describe how water flows for the three dams are jointly controlled, both through narrative and using a simple diagram.

The Powder Mill Dam is operated to regulate outflows from Mill Pond. Monadnock Power Station is the first Power Station below Mill Pond. See Appendix 1(c)-1. Inflow to Monadnock Power Station is controlled by outflows from Mill Pond. The impoundment above Monadnock Power Station Dam has a surface area of approximately 4 acres, storage of 217 acre-feet and a length of 4200 feet at spillway crest elevation 663.8 feet. See Appendix 1(c)-2. The Monadnock Power Station is operated in run-of-the-river mode with inflow equal to outflow.

Pierce Power Station is the second facility below Powder Mill Dam. See Appendix 1(c)-1. The pool impounded by the Pierce Mill Dam is approximately 900 feet long. The pool has an estimated storage of 33 acre-feet and surface area of 7 acres at normal pool (spillway crest elevation of 651.4 feet MSL) and a storage of 51 acre-feet with surface area of about 7 acres at top of dam elevation 655.9 feet MSL. See Appendix 1(c)-3. The Pierce Power Station is operated in run-of-the-river mode with inflow equal to outflow.

Paper Mill Dam is the third and final facility below Powder Mill Dam. See Appendix 1(c)-1. The pool impounded by the Pierce Mill Dam is approximately 700 feet long. The pool has an estimated storage of 26 acre-feet and surface area of 5.5 acres at normal pool (spillway crest elevation of 632.4 feet MSL). See Appendix 1(c)-4. The Paper Mill Power Station is operated in run-of-the-river mode with inflow equal to outflow.

The impoundments behind each of the three Power Stations allow each facility to operate independently from one another dependent on inflow from Mill Pond.

- (2) *Is there anyone on the site other than an employee of MPM who manages and/or operates any or all of the Power Stations? If so, please identify the manager(s) and/or operator(s), and provide a copy of any agreement(s)***

pursuant to which such management and/or operation is performed.

(3)

No, Monadnock Paper Mills, Inc. employs four electricians who are responsible for the management and operation of the three Power Stations.

(4) *MPM provided limited excerpts from a PSNH Interconnection Report for the Power Stations. Please provide a complete copy of this report. Has MPM entered into an Interconnection Agreement with PSNH for the Power Stations? If so, please provide a complete copy of this Agreement*

Please find attached as Appendix 3-1 the complete Interconnection Report. Please also find attached as Appendix 3-2 a signed Interconnection Agreement between MPM and PSNH dated June 27, 1994.

(5) *Please describe how the independent monitor, William P. Short, III, would report each Power Station's output to the NEPOOL-GIS system. Would Mr. Shor report to the GIS both the behind-the-meter production and the excess power output delivered into the PSNH distribution system from each facility?*

Mr. Short intends to read the generation meters for each dam site as well as read the PSNH generation meter for the Monadnock dams. (The PSNH meter output can actually be accessed through the NEPOOL GIS). The difference between the sum of the generation meters for each dam and the PSNH meter will be power consumed behind the meter. Mr. Short would then calculate the percent of power consumed behind the meter attributed to each site by dividing gross generation at a particular dam site by the gross generation of all of the dam sites and then multiplying that number by the net generation number for all of the dams. These latter numbers Mr. Short would upload to each dam site's NON-account.

An example may be helpful in this case:

Assume per dam generation is 100 MWh at Dam 1, 150 MWh at Dam 2, 200 MWh at Dam 3 and 250 MWh at Dam 4 and 300 MWh at Dam 5 and PSNH meter generation of 400 MWh. Total generation is 1,000 MWh. Behind the meter generation is 600 MWh. Behind-the-Meter (PTM) Production for Dam 1 would be 60 MWh, for Dam 2 would be 90

MWh, for Dam 3 would be 120 MWh, for Dam 4 would be 150 MWh and for Dam 5 would be 180 MWh. Mr. Short would upload these latter quantities into the NON-accounts for the respective dams in the NEPOOL GIS.

- (6) *Would PSNH report any of the Power Stations' output to the NEPOOL-GIS system? Is this output aggregated or reported separately for each of the power stations?*

PSNH would still report the net generation output of the five respective dams. There should be no change in the way that PSNH reads and reports the net generation meter from all of the dams.

- (7) *Please provide a copy of the New Hampshire DES Water Quality Certificate issued to MPM in connection with licensing of the Power Stations.*

Please see attached Appendix 6

- (8) *Please explain how and why the hydroelectric facilities for the three power stations are aggregated for Maine Class II RPS certification.*
- (a) *Please provide a copy of any self-certification documentation related to the Power Stations' Maine Class II REC eligibility that has not already been provided with the applications submitted to the Commission.*

Please see Appendix 7-1 for self-certification of the Power Stations as ME Class II RPS eligible facilities.

- (b) *Why do the three Power Stations use a single MSS number for NEPOOL-GIS reporting relative to Maine Class II REC certification? MSS915 is used to report Maine Class II REC certification for the excess power generated by the Power Stations which is not consumed behind-the-meter by MPM's commercial industrial production. The following Asset ID's were also created to report the behind-the-meter generation from each facility/Power Station. Each of the following Asset ID's is also qualified ME Class II (See Appendix 7-1).*

Unit ID	Plant - Unit
NON3941	
9	MONADNOCK STATION 1
NON3942	MONADNOCK STATION 2

0	
NON3941 6	PAPERMILL
NON3941 7	PIERCE STATION 1
NON3941 8	PIERCE STATION 2

An original and two copies of this of this letter have been mailed to your attention. An electronic copy has also been sent via email to your attention at executive.director@puc.nh.gov, with a copy to Ms. Barbara Bernstein at Barbara.bernstein@puc.nh.gov.

Thank you for your consideration of this matter and please feel free to my colleague Stephen Hickey at 617-367-0032 or sjh@essexhydro.com with any further inquiries or requests for clarification.

Sincerely,

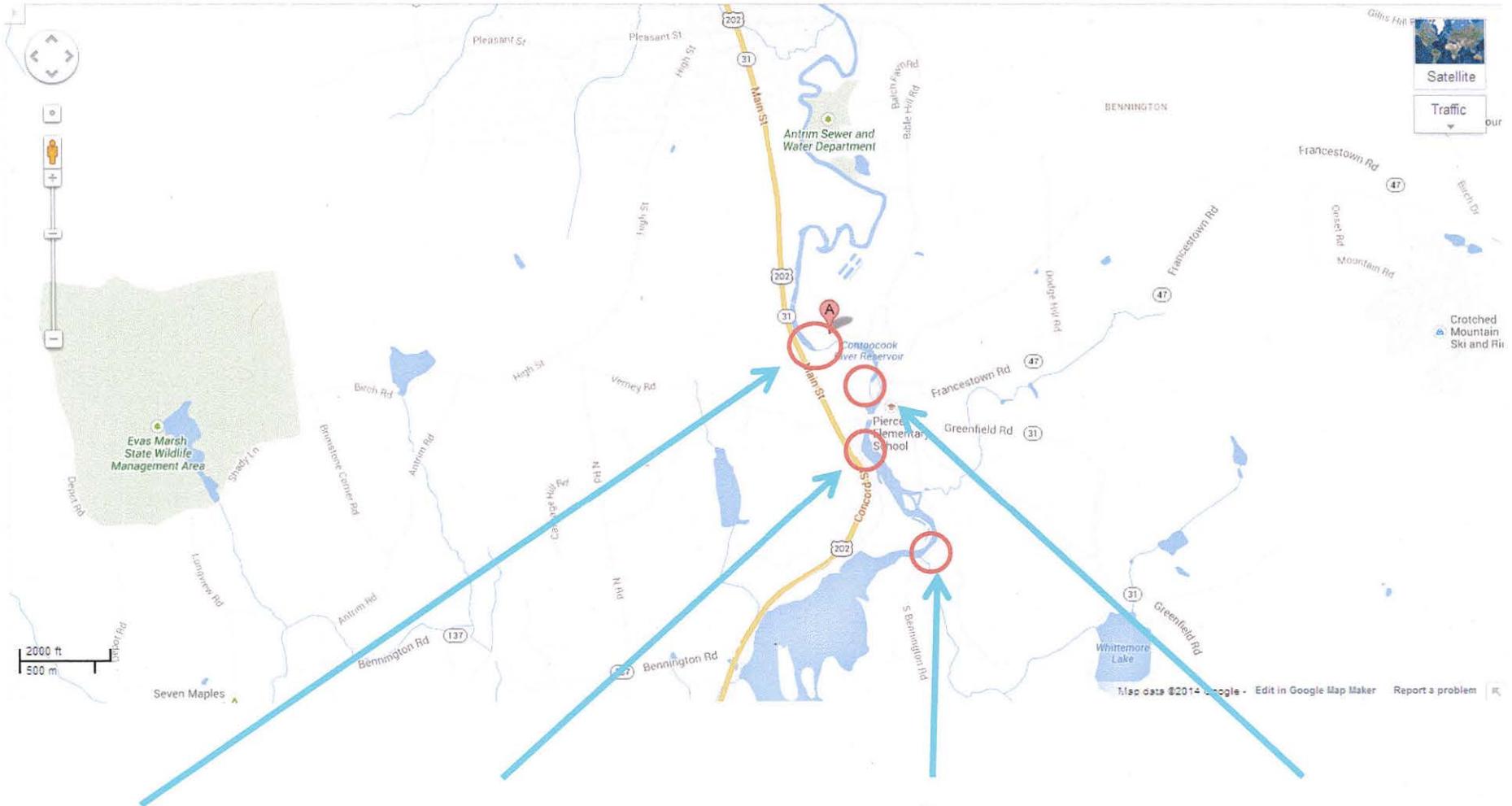
Monadnock Paper Mills Inc.
by Hydro Management Group, LLC
as authorized agent



Andrew J. Locke
REC Aggregator

Appendix 1(a)

Configuration of each Power Station and its relation to the other Power Stations



Mill Dam

Monadnock Station

Powder Mill Dam

Pierce Station

Powder Mill Dam

- No generating capacity installed
- Only controls exclusively for level of Powder Mill Pond

Monadnock Station

- Located 4200 feet downstream of Powder Mill Dam
- Two Generators
 - 125 kw
 - 300 kw
- Only controls at this location are for flow through Monadnock Station generator and flow through dam
- Power generated by each unit at Monadnock Station is recorded here

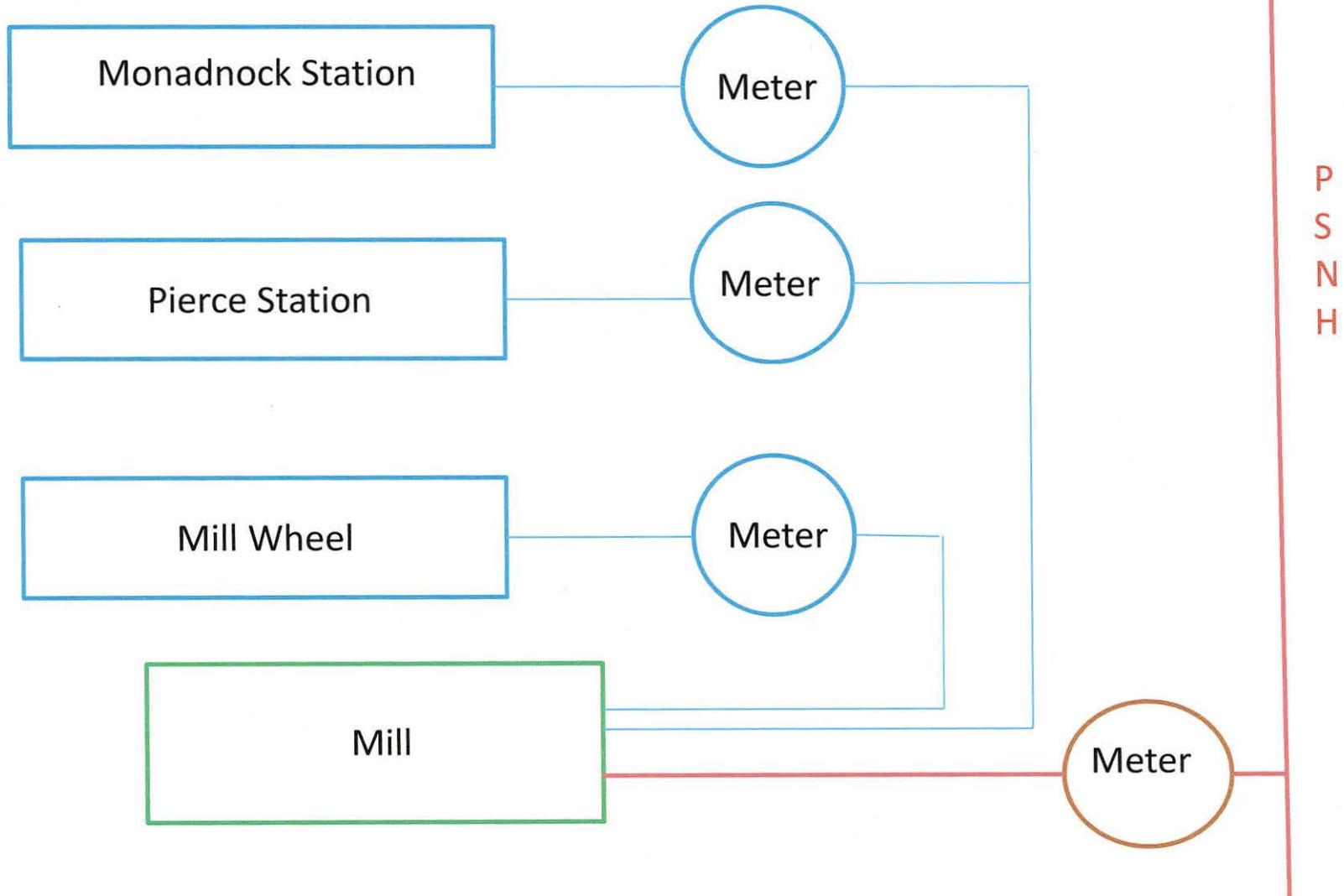
Pierce Station

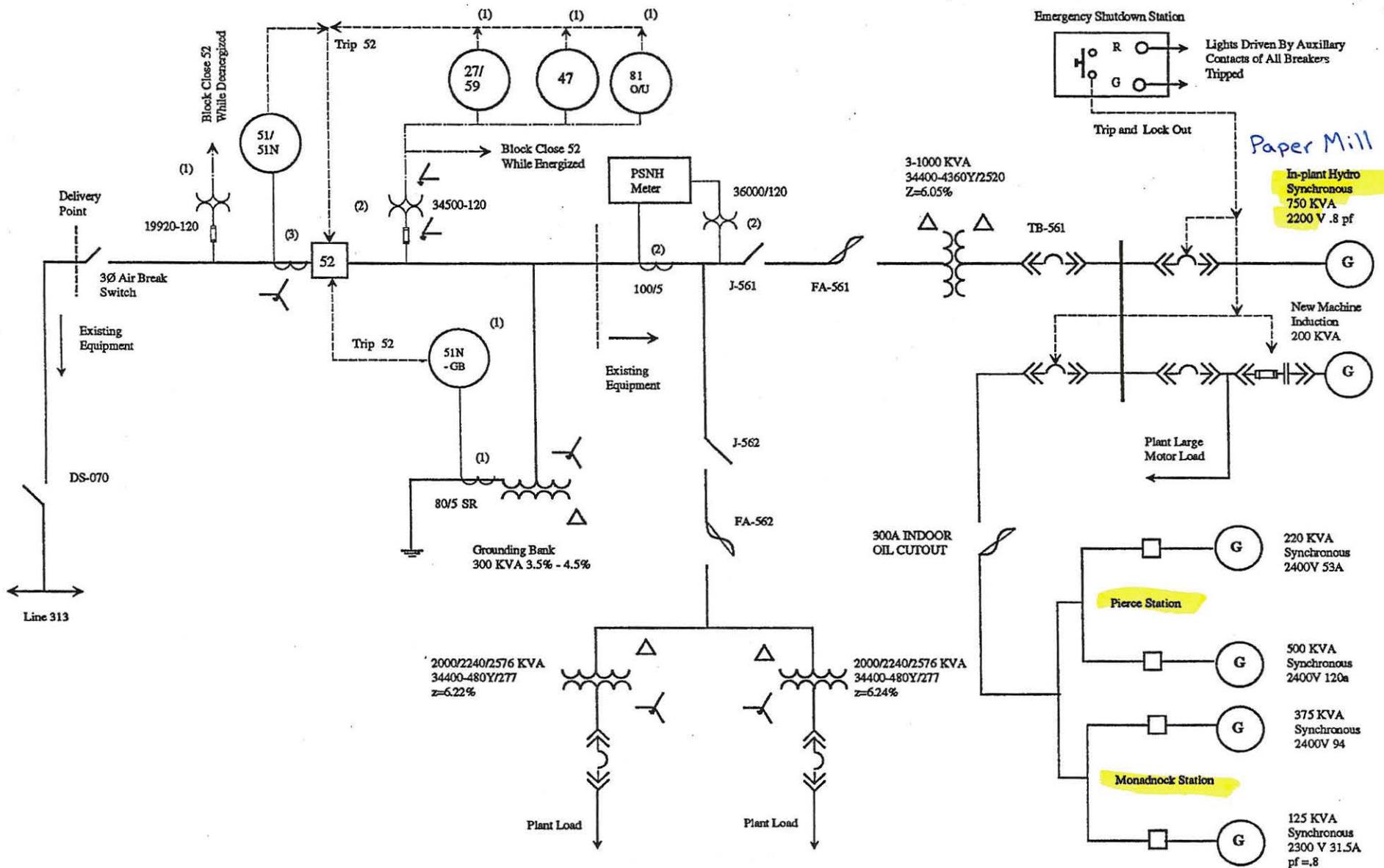
- Located 900 feet downstream from Monadnock Station
- Two Generators
 - 220 kw
 - 550 kw
- Only controls at this location are for flow through Pierce Station generators and flow through dam
- Power generated by each unit at Pierce Station is recorded here

Mill Dam and Mill Wheel Station

- Located 1400 feet downstream from Pierce Station
- One Generator
 - 750 kw
- Only controls at this location are for flow through Mill Wheel generators and flow through dam
- Power generated by Mill Wheel recorded at the mill

Power Flow From Project





Paper Mill
 In-plant Hydro Synchronous
 750 KVA
 2200 V .8 pf

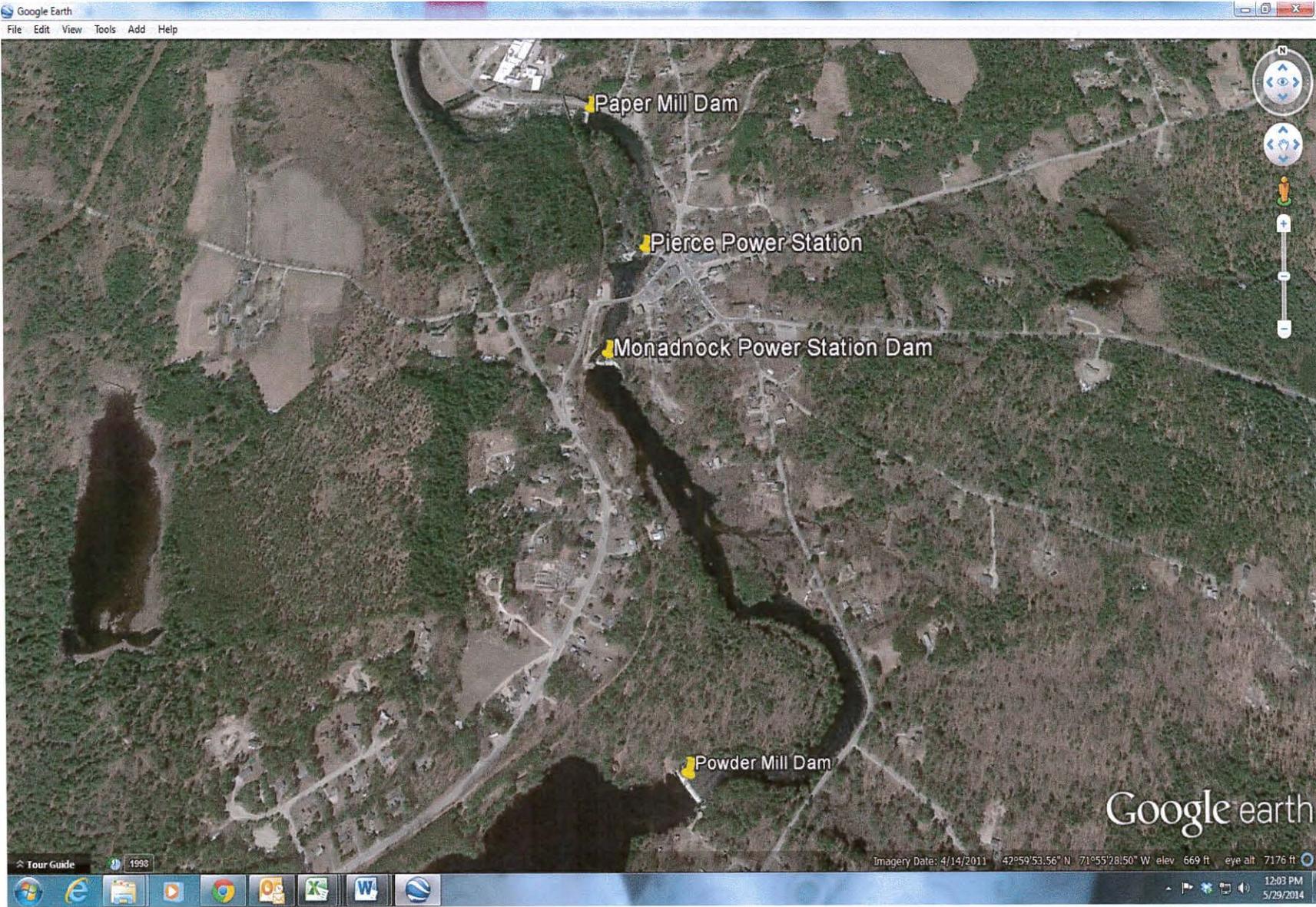
SK-PJB-070-3
 ONE LINE DIAGRAM - PSNH INTERFACE
 WITH MONADNOCK PAPER (SESD # 070)
 P.J. BRADSHAW 05/18/92

- 220 KVA Synchronous 2400V 53A
- Pierce Station
- 500 KVA Synchronous 2400V 120a
- 375 KVA Synchronous 2400V 94
- Monadnock Station
- 125 KVA Synchronous 2300 V 31.5A pf =.8

Appendix 1(c)-1

Location of the Facilities on the Contoocook River

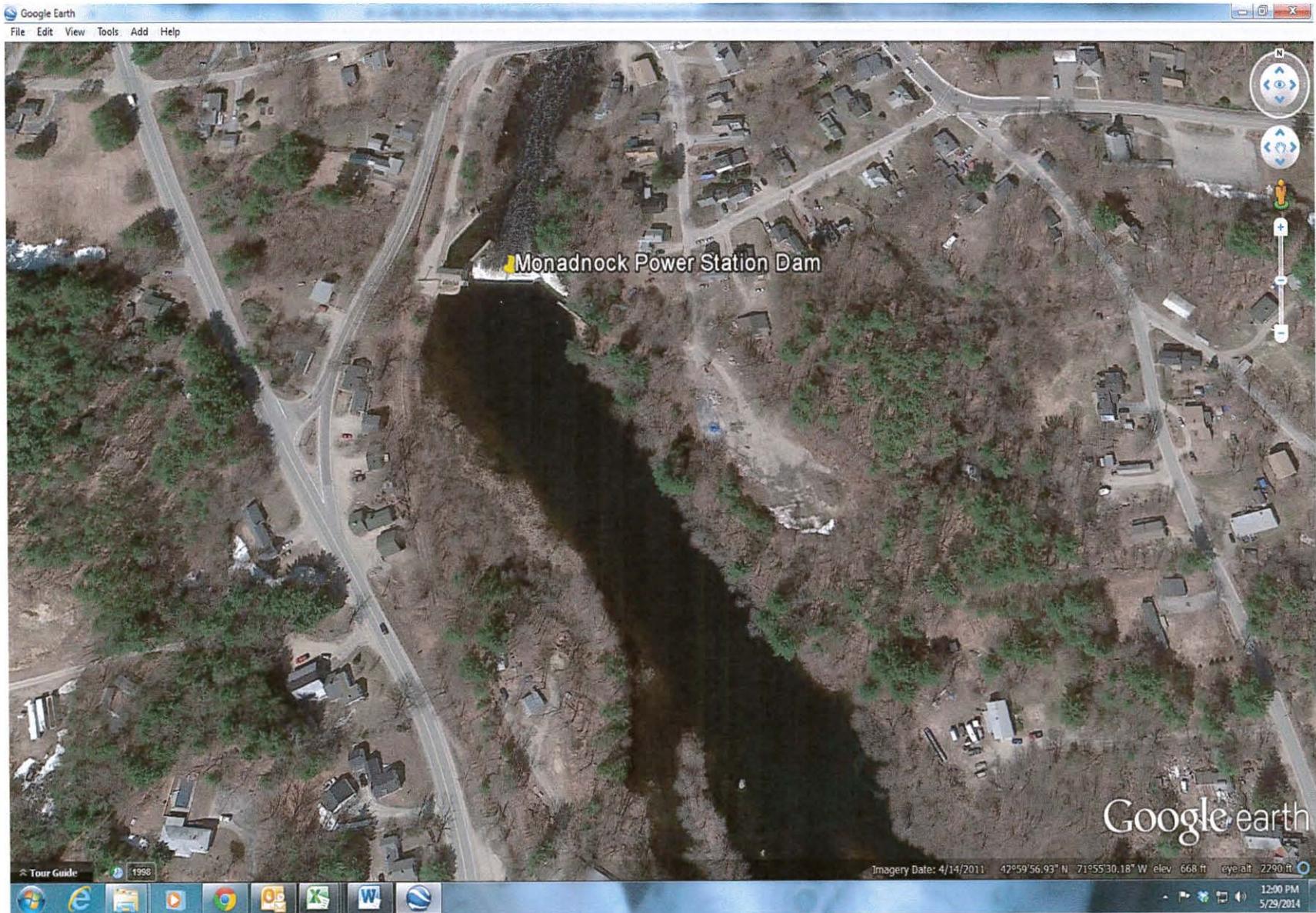
LOCATION OF FACILITIES ON THE CONTOOCCOOK RIVER



Appendix 1(c)-2

Monadnock Power Station Dam and Impoundment

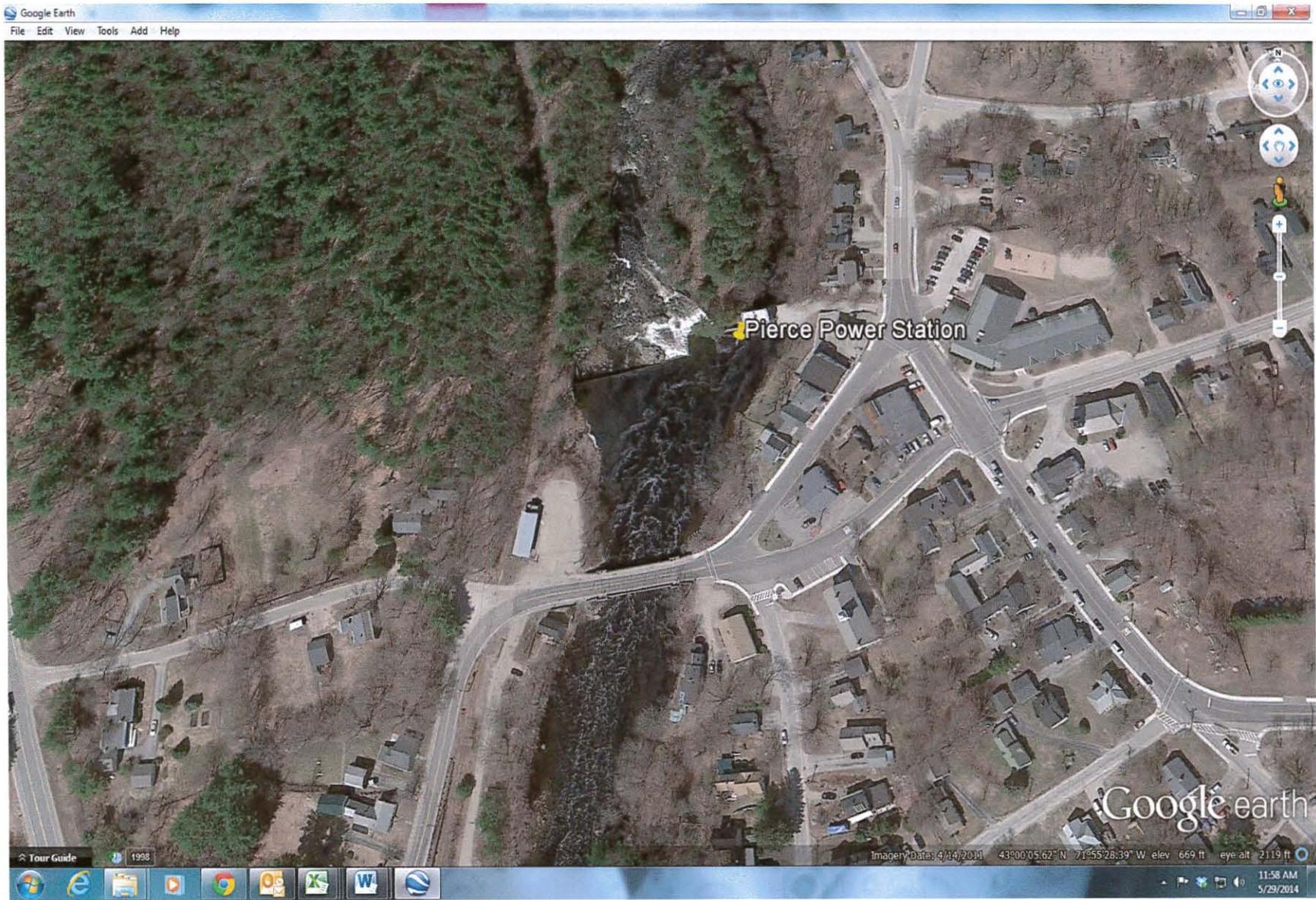
MONADNOCK POWER STATION DAM AND IMPOUNDMENT



Appendix 1(c)-3

Pierce Power Station Dam and Impoundment

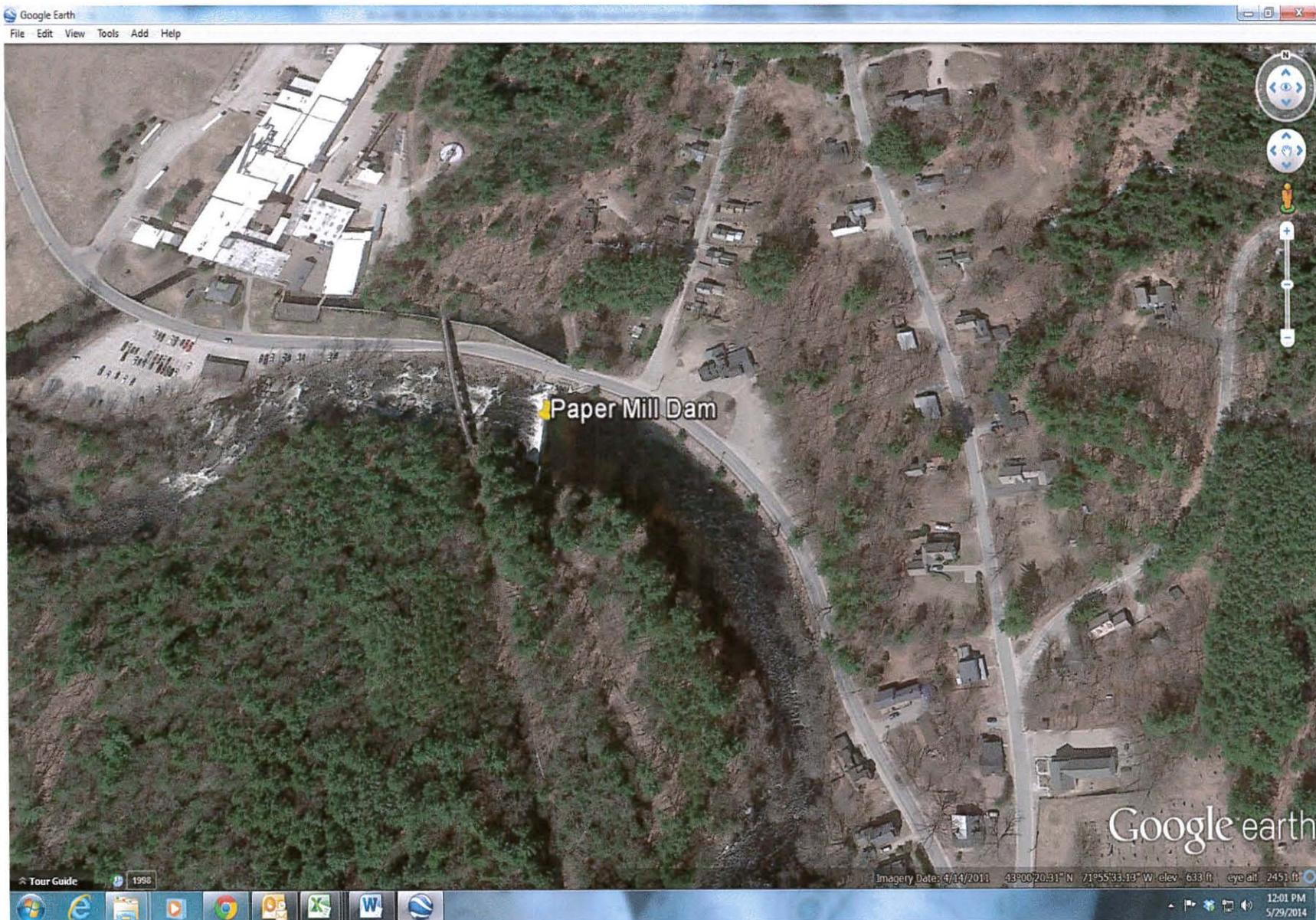
PIERCE POWER STATION DAM AND IMPOUNDMENT



Appendix 1(c)-4

Paper Mill Dam Power Station and Impoundment

PAPER MILL DAM POWER STATION AND IMPOUNDMENT



Appendix 3-1

Monadnock Paper Mill Interconnection Report

PSNH dated May 18, 1992



FILE COPY

INTRA-COMPANY BUSINESS MEMO

#070

Public Service of New Hampshire

Subject Final Interconnection Report - Monadnock Paper Mills (SESD # 070)

From P.J. Bradshaw
To S.B. Wicker, Jr.

District

Date May 18, 1992
Reference

cc: (No Attachments)

D.L. Bacon
J.A.S. Breton
R.E. Evans
M.F. Fraser
R. Leatherbee
R.T. Hybsch
R.G. Prince
J. Van Oudenhove
G.H. Crotto

Circulated Copy:(No Attachments)

P.A. Magoun
P.C. Martin

Enclosed is the final interconnection report for Monadnock Paper Mills (SESD #070). Please forward it to the developer and make a complete internal distribution.

P.J. Bradshaw
ext 3157
e-mail "BRADSHAW"

PJB/ps2
FIN070.WPF

PSNH INTERCONNECTION REPORT FOR
CUSTOMER GENERATION

Monadnock Paper Mills

SESD SITE NO. 070

P.J. Bradshaw
May 18, 1992

INDEX

- I. INTRODUCTION
- II. DESCRIPTION OF MAJOR COMPONENTS
- III. PSNH REQUIREMENTS - GENERAL
 - A. SAFETY CONSIDERATIONS
 - B. SERVICE QUALITY CONSIDERATIONS
 - C. METERING CONSIDERATIONS
- IV. PSNH REQUIREMENTS - SPECIFIC
 - A. SYSTEM CONFIGURATION AND PROTECTION
 - B. SYSTEM METERING
 - C. PRIMARY INTERCONNECTION
 - D. SYSTEM OPERATION
- V. PSNH PRICE ESTIMATES
 - A. SYSTEM PROTECTION
 - B. SYSTEM METERING
 - C. PRIMARY INTERCONNECTION
- VI. INTERCONNECTION EQUIPMENT OWNERSHIP, OPERATION,
AND MAINTENANCE
 - A. DELIVERY POINT
 - B. DESCRIPTION OF RESPONSIBILITIES
- VII. DRAWINGS
 - A. PARTIAL ONE-LINE DIAGRAM (SK-PJB-070-3)

I. INTRODUCTION

A study has been performed to determine the impact on the PSNH system of all generation located within the generating facility located at Monadnock Paper Mills (hereafter referred to as MPM). All technical analysis was based on the equipment listed under Section II, and the facility arrangement illustrated on partial one-line diagram SK-PJB-070-3. Where actual site-specific data was not readily available, estimated or "typical" values were utilized in any required calculations. Any deviation from the listed equipment or the illustrated configuration may have significant safety and/or technical ramifications. Consequently, if changes are anticipated now or in the future, PSNH should be informed immediately so that the requirements and recommendations contained within the report may be revised where necessary. This procedure will ensure that MPM is informed of PSNH requirements in a timely fashion and should eliminate the delays and expense which could otherwise be experienced by MPM.

II. DESCRIPTION OF MAJOR COMPONENTS

A. Description Of Facilities

MPM is a large industrial customer of PSNH, which supplements its service with its own generation, consisting of 5 synchronous hydro units and one induction, steam driven unit. Total generating capacity is 2,170 KVA. The site is located in Bennington, N.H., and interconnects at 34.5KV to a tap on line 313 which is normally fed radially from Jackman substation. The facility interconnects to the PSNH 34.5 KV system through a 3000 KVA, 34.5-2.4 KV transformer bank, connected in a delta-delta configuration. All units generate at 2.4 KV and connect directly to the 2.4 KV bus, which is also the source of power for the plant's 2400 volt motor load. MPM's 2.4 KV system is an ungrounded delta system.

The 200 KVA steam driven unit and one hydro unit are located in the basement of the main plant. Two more units are located at Pierce Station which is approximately 2,000 feet away. The final two units are located at Monadnock Station, which is approximately 700 feet from Pierce Station. The two stations are connected to the mill by a 2.4 KV overhead distribution line.

Metering at the site consists of 4 meters: KW in, Kvar in, Kw out and Kvar out. The load of the plant is usually high enough that the PSNH system is providing some power. However, during periods when generation exceeds load, MPM does generate power into the system, and sells that power to PSNH.

Typically, all hydro units will be on line when

sufficient water exists and units are available. The 750 KVA unit in the plant itself is usually the first to be started if water is low. However, there are no hard and fast unit commitment procedures. Any combination of units could be running at a given time. None of the units have black-start capability. Without an energized PSNH power supply to synchronize to, none can be brought on line.

With the exception of the recently added 200 KVA induction machine, the generation at MPM has been in service for decades. Each of the machines has some level of fault protection, however the site as presently configured does not meet modern PSNH interconnection requirements for a site of this capacity. The primary concern is the delta-delta transformer that serves as a GSU. Since there is no ground source at MPM, PSNH customers connected phase to ground on the 313 line could be exposed to excessive voltages if generation at the plant continued to run after the breaker at Jackman s/s tripped for a line to ground fault.

Rather than require that each machine at MPM be brought into compliance with today's criteria, this report will specify a protection and control package to be implemented primarily at the interface between PSNH and MPM (See sketch SK-PJB-070-3).

B. Electrical Components

1. Plant Steam Unit

Generator: Toshiba induction, 200 KW, .80 PF, 2400V, 1800 RPM

Turbine: Worthington S2R, 260 HP @ 4000 RPM

Governer: Woodward 505 electronic governer.

2. Plant Hydro

Generator: Electric Machinery synchronous, 750 KVA, 261a, .80 PF, 2200V, 180 RPM.

Exciter: 14 KW, 125V, 112a, 750 RPM

Turbine: Horizontal shaft hydroturbine, 1000 HP

3. Pierce Station #1

Generator: Westinghouse synchronous, 500 KVA, 120a, 2400V, 150 RPM.

Exciter: Westinghouse belt driven, 21KW, 125V, 168a, 1200 RPM.

Turbine: Vertical shaft hydroturbine.

4. Pierce Station #2

Generator: Westinghouse synchronous, 220 KVA, 53a, 2400V, 225 RPM.

Exciter: Westinghouse belt driven, 11.5 KW, 125V, 92a, 1200 RPM.

Turbine: Vertical shaft hydroturbine.

5. Monadnock Station #1

Generator: Electric Machinery synchronous, 125 KVA, 31.5a, .80 PF 2300 V, 180 RPM.

Exciter: Static

Turbine: Vertical shaft hydroturbine.

6. Monadnock Station #2

Generator: Westinghouse synchronous, 375 KVA, 94a, .80 PF, 2300 V, 257 RPM.

Exciter: Westinghouse, shaft mounted, 10 KW, 125V, 80a, 257 RPM, 31.5a

Turbine: Vertical shaft hydroturbine.

7. Generator Stepup Transformer: 3-1000 KVA, 34400-4360Y/2520V, Z=6.05%, configured as Delta-Delta bank.

8. Grounding Bank (new requirement): 3-100 KVA, Z=3.5% - 4.5%. See section IV.A.

9. Three phase vacuum interrupting device (new requirement). See section IV.A.

10. Three phase air break switch (new requirement). See section IV.A.

III. PSNH REQUIREMENTS - GENERAL

A. Safety Considerations

1. The connection of the facility to the PSNH system must not compromise the safety of PSNH's customers, personnel, or the owner's personnel.

2. The generating facility must not have the capability of energizing a de-energized PSNH circuit.

3. An emergency shutdown switch with facility status indicator lights, and a disconnecting device with a visible open shall be made available for unrestricted use by PSNH personnel. The operation of the switch shall cause all of the facility's generation to be removed from service, and shall block all automatic startup of generation until the switch is reset. The status lights, mounted with the shutdown switch, shall be located outdoors at a position acceptable to PSNH operating division personnel. A red light shall indicate that the facility has generation connected to the PSNH system. A green light shall indicate that all generation is disconnected from the PSNH system. The lights shall be driven directly from auxiliary switches located on the breakers tripped by the shutdown switch. The disconnecting device with visible open shall be located between the PSNH system and the facility's generation.

In this instance, the emergency shutdown switch will trip the following breakers (refer to SK-PJB-070-3):

- a. The breaker connecting the 750 KVA hydro to the 2400V switchgear.
- b. The breaker connecting Monadnock and Pierce stations to the 2400V switchgear.
- c. The generator breaker of the 200 KVA induction unit.

This will allow the shutdown switch to disconnect the facility's generation without disconnecting load.

4. The settings for all protective relays required by PSNH will be developed by PSNH at MPM's expense.
5. A crew of PSNH relay technicians will apply settings to and verify the proper functioning of those protective systems required by PSNH. This work will be performed at the MPM's expense.
6. The generating facility has full responsibility for ensuring that the protective system and the associated devices are maintained in reliable operating condition. PSNH reserves the right to inspect and test all protective equipment at the interconnecting point whenever it is considered necessary. This inspection may include tripping of the breakers.
7. The short circuit interrupting device(s) must have sufficient interrupting capacity for all faults that might exist. The PSNH system impedance at the facility will be supplied on request.
8. All shunt-tripped short circuit interrupting devices applied to generators must be equipped with reliable power sources. A D.C. battery with associated charging facilities is considered a reliable source.
9. All synchronous generator facilities must be equipped with battery-tripped circuit breakers.
10. Any protection scheme utilizing AC control power must be designed in a fail-safe mode. That is, all protective components must utilize contacts which are closed during normal operating conditions, but which open during abnormal conditions or when control power is lost to de-energize the generator contactor coil. These schemes may be utilized only with non-latching contactors and may not be used with synchronous generators.

11. A complete set of AC and DC elementary diagrams showing the implementation of all systems required by PSNH must be supplied for PSNH review. These drawings should be supplied as soon as possible so that any non-conforming items may be corrected by MPM without impacting the scheduled completion date of the facility.

12. All voltage transformers driving PSNH-required protection systems must be rated by the manufacturer as to accuracy class, and must be capable of driving their connected burdens with an error not exceeding 1.2 percent.

13. All current transformers driving PSNH-required protection systems must be rated by the manufacturer as to accuracy class and must be capable of driving their connected burdens with an error not exceeding 10 percent.

14. All PSNH-required protective relays, and any other relays which PSNH will be requested to test, must be equipped with test facilities which allow secondary quantity injection and output contact isolation.

15. It is not the policy of PSNH to maintain a stock of protective relays for resale to facility developers. Since many protective devices have delivery times of several months, Developers are strongly advised to order them as soon as possible after PSNH type-approval is received.

16. Protection of the generating facility equipment for problems and/or disturbances which might occur internal or external to the facility is the responsibility of MPM.

17. After acceptance of this report, the facility shall have 6 months to meet the requirements of sections III and IV, including the calibration and testing of all protection and control systems. During that period of time, the existing generation may continue to operate, provided that existing protection and control systems remain fully operational.

B. Service Quality Considerations

1. The connection of the facility to the PSNH system must not reduce the quality of service currently existing on the PSNH system. Voltage fluctuations, flicker, and excessive voltage and current harmonic content are among the service quality considerations.

2. In general, induction generators must be accelerated to "synchronous" speed prior to connection to the PSNH system to reduce the magnitude and duration of accelerating current and resulting voltage drop to PSNH customers to acceptable levels.

3. In general, synchronous generators may not use the "pull-in" method of synchronizing due to excessive voltage drops to PSNH customers.

4. Power factor correction capacitors may be required for some facilities either at the time of initial installation, or, at some later date. The installation will normally be done by the MPM at their expense.

5. Certain facilities having installed capacity similar in magnitude to connected circuit load may require that control modifications be made to tap changers in the electrical vicinity. Should they be necessary, the modification will be made at the Developers' expense.

6. Automatic reclosing of the PSNH circuit after a tripping operation may occur after an appropriate time delay. If voltage blocking of automatic reclosing is required, it will be added at the Developers' expense.

C. Metering Considerations

1. Except for metering and protection/control voltage sensing and generator and/or capacitor contactor supply voltage, no unmetered AC power shall be taken from the PSNH system.

IV. PSNH REQUIREMENTS - SPECIFIC

A. System Configuration and Protection

All equipment to be obtained by MPM must be reviewed and approved by PSNH.

1. The facility must be arranged and equipped as per partial one line diagram SK-PJB-070-3.

2. Device 52 must be a PSNH-approved 3 phase vacuum interrupting device.

3. As shown in sketch SK-PJB-070-3, a three phase air break switch must be installed between the PSNH system and the three phase interrupting device. The BIL rating of the switch should be 150 KV or greater.

4. The following protective functions must be supplied and connected to automatically trip 52. These devices must be utility grade as approved by PSNH.

51/51N Interrupting Device Overcurrents. If the interrupting device is a recloser, the recloser control may be acceptable if equipped with suitable overcurrent protective functions.

- 27/59 Over/Under Voltage Relay.
- 47 Negative Sequence Over Voltage Relay.
- 51N-GB Grounding Bank Neutral Overcurrent Relay.
- 810/U Over/Under Frequency Relay

5. A grounding bank will be required which conforms to the following specifications:

a. 3-100 KVA matched step transformers (low side voltage 2400V or greater) wired in a delta-grounded wye configuration (wye on the 34.45 KV side.)

b. Bank impedance of the individual transformers should be between 3.5 and 4.5 percent on 100 KVA.

c. Transformers must be 4-bushing models, i.e voltage rating 19920/34500 GRDY - E where "E" is the rated phase to phase voltage on the low voltage side.

6. Device 52 must be equipped with closing permissives such that the PSNH side of 52 must be energized and the MPM side must be deenergized before the device can be closed.

7. If MPM selects a recloser to be used as device 52, then all testing of and application of settings to the control will be performed by PSNH Western Division electricians.

B. System Metering

No changes to existing metering are required at this time. However, changes may be required if MPM installs phase to neutral connected load. PSNH should be informed if such a change is planned.

C. Primary Interconnection

In order to facilitate a straightforward interface, PSNH will sell MPM sufficient distribution plant to mount all required equipment on the source side of the existing primary meter location. MPM will have responsibility for specification, purchase and installation of all new equipment from the plant up to and including the air break switch.

As stated in section IV.A, all equipment to be obtained by MPM must be reviewed and approved by PSNH.

D. System Operation

Automatic Reclosing:

PSNH does not require automatic reclosing of device 52 following a trip due to relay operation. However MPM has expressed a desire to add reclosing in order to restore plant load as soon as possible. PSNH and MPM will investigate this option.

V. PSNH PRICE ESTIMATES

The following estimates for labor, materials, and overheads are supplied as an aid to the MPM for financial planning purposes. Should MPM elect to have PSNH perform any of the work described in the estimates, they will ultimately be billed for the full actual cost of any work performed.

Authorization for PSNH to perform any of the work or supply any of the equipment described below must be forwarded to the Supplemental Energy Sources Department along with a minimum payment covering 50% of the estimated labor and materials cost. PSNH will neither perform work nor order materials until this requirement has been met.

A. System Protection

1. All protective relay materials listed under IV.2 will be purchased by MPM. PSNH must be notified as to exact relay model numbers proposed before ordering so that proper setting capability exists for interfacing with the PSNH system.

SUBTOTAL \$ 0.00

2. Estimated labor for a PSNH crew to test and load check PSNH required relays and to perform trip tests. Also, labor to verify correct connection of the grounding bank.

SUBTOTAL \$1907.00

3. Engineering - Control circuits review, specification review, meetings, system analysis, PSNH required relay settings.

SUBTOTAL \$6643.00

SUBTOTAL - SECTION A: \$ 8550.00

B. System Metering

SUBTOTAL \$ 0.00

C. Primary Interconnection

1. MPM will be responsible for obtaining and installing all equipment up to and including the plant and the air break switch. PSNH must be notified as to exact specifications proposed before ordering.

SUBTOTAL: \$ 0.00

2. Cost to purchase sufficient overhead distribution plant from PSNH to mount all required equipment.

SUBTOTAL: \$ 488.00

3. Cost of labor to set and test 52 recloser control (if applicable: see section IV.A.7).

SUBTOTAL: \$ 355.00

SUBTOTAL - SECTION C: \$ 843.00

GRAND TOTAL (A + B + C): \$ 9393.00

VI. INTERCONNECTION EQUIPMENT OWNERSHIP, OPERATION, AND MAINTENANCE

A. Delivery Point

For the purpose of establishing ownership, operation, and maintenance responsibilities, the location of facility energy delivery to PSNH (the "Delivery Point") must be defined. At this facility, the delivery point is located on the source side of the new three-phase air break switch.

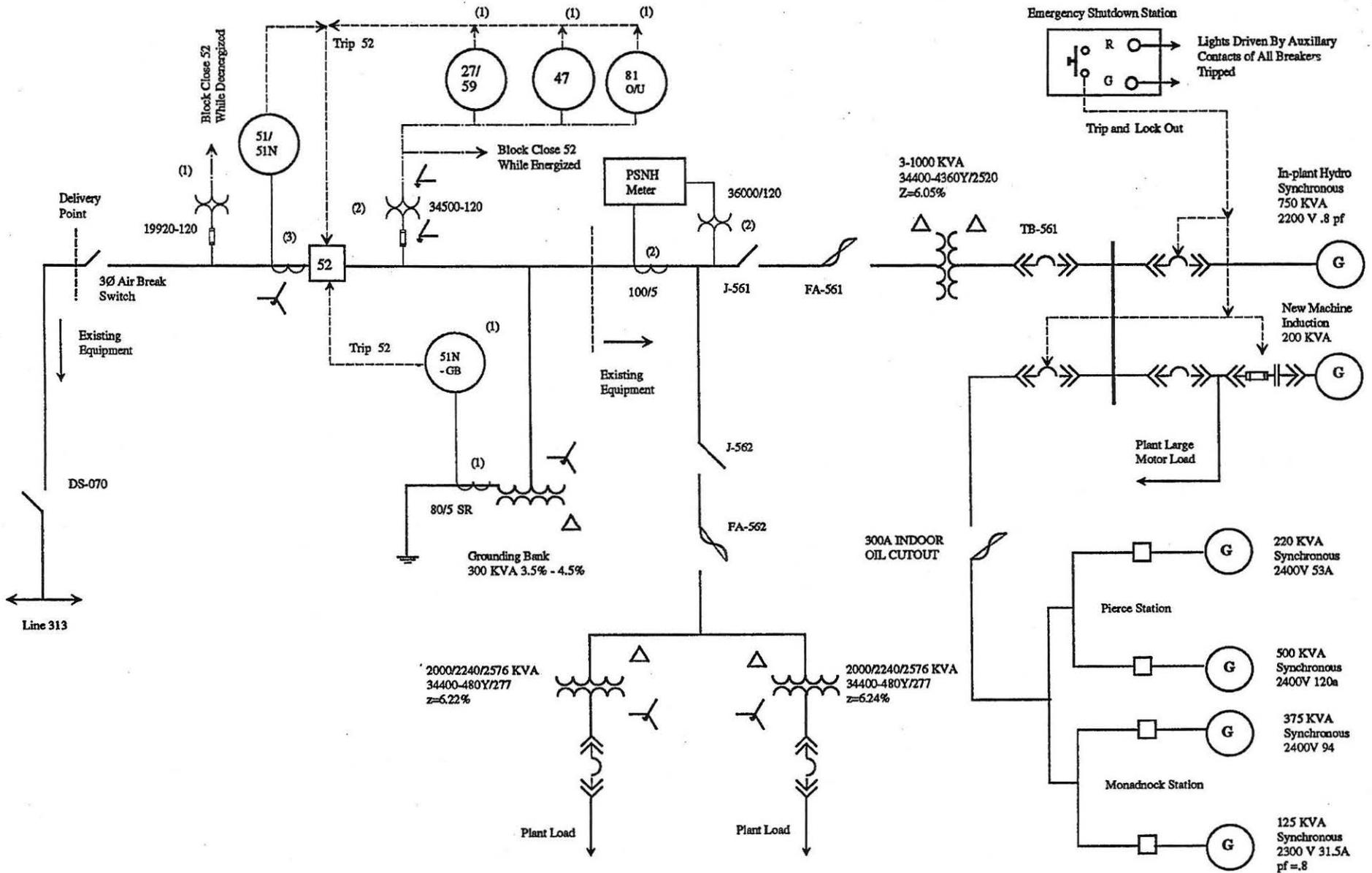
B. Description of Responsibilities

MPM will own and be responsible for maintaining all equipment from the three phase switch into the plant building, with the exception of the primary meter set, which is jointly owned and maintained by PSNH and MPM.

VII. DRAWINGS

Drawing SK-PJB-070-3 is attached.

P.J. Bradshaw
May 18, 1992



SK-PJB-070-3
ONE LINE DIAGRAM - PSNH INTERFACE
WITH MONADNOCK PAPER (SESD # 070)
P.J. BRADSHAW 05/18/92

Appendix 3-2

Monadnock Paper Mill Interconnection Agreement with PSNH dated June 27, 1994

121-111
CONTINUED

AGREEMENT BETWEEN
MONADNOCK PAPER MILLS, INC.
AND
PUBLIC SERVICE COMPANY OF NEW HAMPSHIRE

This AGREEMENT entered into this 27th of June 1994 by and between MONADNOCK PAPER MILLS, INC., a New Hampshire corporation (hereinafter referred to as "Monadnock"), having its principal place of business in Bennington, New Hampshire, and PUBLIC SERVICE COMPANY OF NEW HAMPSHIRE, a New Hampshire corporation having its principal place of business in Manchester, New Hampshire (hereinafter referred to as "PSNH").

WITNESSETH

WHEREAS, Monadnock is primarily engaged in the manufacture of specialty papers at its facility in Bennington, New Hampshire; and

WHEREAS, Monadnock serves a portion of its electric energy requirements from several of its own generators; and

WHEREAS, Monadnock receives the remainder of its electric energy requirements from PSNH; and

WHEREAS, Monadnock has demonstrated, and PSNH has verified, that it would be economically beneficial for Monadnock to install and utilize additional generation to serve the portion of its electric energy requirements currently served by PSNH; and

WHEREAS, PSNH is willing and able to provide service to Monadnock at competitive prices during the term of this Agreement; and

WHEREAS, Monadnock will continue to meet part of its demand with electricity produced by Monadnock's existing generation facilities and other generation defined herein; and

WHEREAS, Monadnock is willing to accept certain conditions during the term of this Agreement, including utilizing PSNH as its sole supplier of its electricity requirements as set forth herein;

NOW, THEREFORE, in consideration of the mutual covenants and agreements hereinafter contained, Monadnock and PSNH hereby agree as follows:

Article 1 - Definitions

The following definitions shall apply throughout this Agreement:

Contract Demand is the level of demand that can be taken by Monadnock under the pricing terms hereunder, equal to 4,000 kilowatts. Contract Demand may be increased pursuant to Article 5 of this Agreement.

Contract Year is a twelve-month period during the term of this Agreement commencing on June 1, 1995, and on the anniversary thereof.

Billing Demand is the lesser of Maximum Demand as defined in Rate LG of PSNH's Tariff, or Contract Demand.

Distribution/Transmission Demand Charge is an amount to be applied to Monadnock's Contract Demand as defined herein.

Generation Capacity Charge is an amount to be applied to Monadnock's Billing Demand as defined herein.

Excess Demand is Maximum Demand as defined in Rate LG minus Contract Demand. If Excess Demand is less than zero, it shall be deemed to be equal to zero.

Excess Energy is energy (kilowatt-hours) associated with that portion of any thirty-minute kilowatt demand in excess of Contract Demand. Excess Energy is taken whenever the thirty-minute kilowatt demand for a particular thirty-minute interval is greater than Contract Demand. Under such circumstances, Excess Energy for that interval shall be equal to the difference between the two amounts, divided by two.

Commission is the New Hampshire Public Utilities Commission.

Tariff is the Tariff for Electric Service of PSNH as now or hereafter effective and on file with the Commission.

FPPAC is the Fuel and Purchased Power Adjustment Clause contained in the Rate Agreement approved by the Commission in Order No. 19,889 dated July 20, 1990 in Docket No. DR 89-244 ("Rate Agreement").

FPPAC Base Amount ("BA") is the amount of FPPAC costs included in PSNH's base rates under the Rate Agreement.

FPPAC Rate is the amount of FPPAC costs in excess of "BA". The FPPAC Rate is approved by the Commission every six months and is included in the energy charges of PSNH's Tariff.

Nuclear Decommissioning Charge is an amount approved by the Commission and included in the energy charges of PSNH's Tariff to recover the cost incurred by PSNH to be contributed to the Nuclear Decommissioning Financing Fund as determined by the Nuclear Decommissioning Financing Committee.

Article 2 - Basic Understanding

PSNH will furnish and Monadnock will use electricity in accordance with the provisions of this Agreement, and in accordance with the Terms and Conditions of the Tariff and the specific provisions of Large General Service Rate LG (Rate LG) or otherwise applicable rate schedule, where not specifically

provided otherwise in this Agreement. Monadnock may continue to produce electricity from its own existing facilities or from new facilities installed pursuant to Article 8 herein and use that electricity to meet its demand before taking Billing Demand from PSNH. This Agreement provides for reduced electricity prices for Contract Demand and for Billing Demand and related energy taken by Monadnock. Any Excess Demand and Excess Energy that is supplied by PSNH will be provided under Rate LG, excluding the ratchet applied to Maximum Demand under Rate LG.

Article 3 - Rates and Billing Determinants for
Contract Demand and Related Energy

Monadnock will be charged for service from PSNH under Rate LG until the commencement of the first Contract Year, June 1, 1995. For service during each successive Contract Year thereafter, all demand and related energy taken by Monadnock up to the level of Contract Demand during each thirty-minute interval will be billed under the following prices:

Metering, Administration and Demand Charges

<u>Contract Year</u>	<u>Monthly Metering and Administration Charge</u>	<u>Monthly Distribution/Transmission Demand Charges (\$/KW of Contract Demand)</u>	<u>Monthly Generation Capacity Charges (\$/KVA of Billing Demand)</u>
1	\$5,000	\$4.95	\$1.44
2	5,000	5.22	1.73
3	5,000	5.22	1.73
4	5,000	5.22	1.73
5	5,000	5.43	2.08
6	5,000	5.65	2.50
7	5,000	5.90	3.00
8	5,000	6.17	3.60
9	5,000	6.45	4.32
10	5,000	6.74	5.18

Energy Charges

Energy charges for all energy associated with any 30-minute demand up to the level of Contract Demand shall be equal to the sum of (A) and (B) defined below:

(A) = The sum of: the FPPAC Rate, the FPPAC "BA", and 1.75 cents per kilowatt-hour. If any successor or revision to FPPAC is approved by the Commission, then the components of such successor or revision shall be used in lieu of the FPPAC components in the formula above for the remaining term of this Agreement. In the event that FPPAC is not applied to PSNH's Tariff rates, and no successor or revision thereto is approved by the Commission, the FPPAC formula in effect at the time this contract is executed shall be used for this calculation for the remaining term of this Agreement.

(B) = The Nuclear Decommissioning Charge.

Article 4 - Rates and Billing Determinants for Excess Demand and Energy

All Excess Demand and Excess Energy taken by Monadnock shall be billed under Rate LG, excluding the customer charge and excluding the ratchet applied to Maximum Demand. Any excess energy taken by Monadnock during the on-peak period shall be charged at the lowest rate for on-peak energy, and excess energy taken during off-peak hours will be at the lowest rate for off-peak energy.

Article 5 - Adjustments to Contract Demand

If Monadnock's Excess Demand is 500 KVA or greater in six or more months of any Contract Year during the term of this Agreement, then the level of the Contract Demand may be raised upon mutual agreement of the parties.

Article 6 - Maximum Charges for Electric Service

The maximum amount that Monadnock will be billed for service under this Agreement during any Contract Year will be the greater of (a) the amount that Monadnock would have been billed during that Contract Year under standard tariff rates, or (b) the sum of the Metering and Administrative Charges and the Distribution/Transmission Demand Charges billed to Monadnock under this Agreement during that Contract Year.

Each year within thirty days following the commencement of a Contract Year, PSNH will compare the amount billed to Monadnock under this Agreement during the preceding Contract Year with the greater of (a) or (b) above. If the amount billed to Monadnock under this Agreement exceeds the greater of (a) or (b) above, the difference will be refunded to Monadnock as a credit on their next monthly bill for service.

Article 7 - Minimum Charges for Electric Service

During each Contract Year, Monadnock will pay no less than the amount it would have been charged if the rates charged to Monadnock were equal to 103% of PSNH's short-term avoided cost as determined by the Commission, unless such amount is greater than the maximum charge described in Article 6, in which case the provisions of Article 6 shall apply.

Article 8 - PSNH as Sole Supplier

Monadnock shall utilize PSNH as its sole source of supply for electricity in excess of Monadnock's existing generation up to the level of Contract Demand during the term of this Agreement. Monadnock shall not

purchase electricity from another source, but it may install additional generation to serve its Billing Demand when such additional generation is associated with the efficient utilization of the excess steam capacity resulting from the replacement of its steam drive with an electric drive, or when such additional generation is from the replacement or addition of any component of its existing hydroelectric generating system.

Article 9 - Right of First Refusal

PSNH shall have the right of first refusal over any other party to develop any electric generation project with Monadnock to be used to serve Monadnock's Excess Demand, or for the purpose of developing new generation to sell to other parties. PSNH and Monadnock will negotiate in good faith to establish acceptable terms and conditions for such arrangements.

If Monadnock plans to develop, either on its own or with another party, any electric generation to serve its Excess Demand or to sell to other parties, it shall notify PSNH. If it is legally permissible for Monadnock to obtain another source of electricity, and if Monadnock is able to obtain another source of electricity to serve its Excess Demand, it shall likewise notify PSNH. Upon such notice PSNH shall have 90 days within which to exercise a right of first refusal to either develop said electric generation or to match the price or cost for electricity from said source.

Article 10 - Conservation and Load Management

Monadnock shall be entitled to participate in any appropriate conservation and load management programs offered by PSNH including those that are in effect or that become effective during the term of this Agreement.

Article 11 - Billing Terms

The total charges for service delivered under this Agreement are billed monthly and payable upon presentation of the bill. All amounts previously billed but remaining unpaid at any meter reading date (normally thirty days from the prior meter reading date) shall be subject to a late payment charge at the rate specified in Rate LG of the Tariff.

Article 12 - Effective Date and Contract Term

The Effective Date of this Agreement shall be July 11, 1994 or as of the first day of the month following the date upon which the Commission shall issue any requisite approval, whichever is later. The effectiveness of this Agreement is subject to approval without conditions by the Commission. This Agreement shall continue in full force and effect for a period of eleven years from the Effective Date, at which time the term shall end.

Article 13 - Default

In the event of default by either party, the other party shall notify the party in default. The party in default shall have 30 business days to cure the default. In the event the default is not cured within the 30-day period, the other party shall have the right to consider the Agreement terminated. This paragraph shall apply notwithstanding any other provision of this Agreement; furthermore, exercise of a party's rights under this Article does not alter any party's remedies under this Agreement and applicable law.

Article 14 - Force Majeure

Either party shall not be considered to be in default hereunder and shall be excused from performance hereunder if and to the extent that it shall be prevented from doing so by storm, flood, lightning, earthquake, explosion, civil disturbance, labor dispute, act of God or the public enemy, action of a court or public authority, or any cause beyond the reasonable control of either party and not due to the fault or negligence of the party claiming Force Majeure. However, an event of Force Majeure shall not excuse either party from making a payment for service rendered under this Agreement prior to the period of Force Majeure that it is legally required to make.

If either party is rendered wholly or partly unable to perform its obligations under the Agreement because of Force Majeure, that party shall be excused from whatever performance is affected by the Force Majeure to the extent so affected provided that:

- (A) The non-performing party, promptly after the occurrence of the Force Majeure, gives the other party written notice describing the particulars of the occurrence;
- (B) The suspension of performance be of no greater scope and of no longer duration than is reasonably required by the Force Majeure;
- (C) No obligations of either party that arose before the occurrence causing the suspension of performance be excused as a result of the occurrence; and
- (D) The non-performing party uses its best efforts to remedy its inability to perform.

Article 15 - Waiver of Terms or Conditions

The failure of either party to enforce or insist upon compliance with any of the terms or conditions of this Agreement shall not constitute a general waiver or relinquishment of any such terms or conditions, but the same shall remain at all times in full force and effect.

Article 16 - Successors and Assigns

This Agreement will be binding on Monadnock's and PSNH's respective successors, assigns and purchasers.

Article 17 - Applicable Law

The parties agree that any disputes regarding this Agreement will be governed by the Laws of the State of New Hampshire.

Article 18 - Mailing Address

Any notices required in this Agreement shall be sent to the following mailing addresses:

PSNH: Public Service Company of New Hampshire
 P. O. Box 330
 Manchester, New Hampshire 03105-0330
 Attention: Rate and Regulatory Services Department

Monadnock: Monadnock Paper Mills, Inc.
 117 Antrim Road
 Bennington, NH 03442

Attention: Michael S. Rizzio, or other authorized
representatives as Monadnock may from time
to time determine.

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be duly executed and by the proper officials thereof who are duly authorized as of the signature and effective dates set forth herein.

Julia P. Moore
(Witness)

MONADNOCK PAPER MILLS, INC.

BY:

[Signature]

TITLE:

Vice President - Finance

DATE:

June 27, 1994

[Signature]
(Witness)

PUBLIC SERVICE COMPANY OF NEW HAMPSHIRE

BY:

[Signature]

TITLE:

Vice President - Customer Service and Economic Development

DATE:

6/24/94

Appendix 6

MPM Water Quality Certification date October 20, 1983

LAW OFFICES OF
RANSMEIER & SPELLMAN
ONE EAGLE SQUARE
P O BOX 1378
CONCORD, NEW HAMPSHIRE 03301-1378

JOSEPH S RANSMEIER
LAWRENCE E SPELLMAN
JOHN C RANSMEIER
DOM S D'AMBRUOSO
LAWRENCE S SMITH
MICHAEL LENEHAN
E TUPPER KINDER
STEVEN E HENGGEN

TELEPHONE (603) 228-0477

October 25, 1983

JAMES B GODFREY
OF COUNSEL

FILED
1983 OCT 28 AM 11:20
REGULATORY COMMISSION

Mr. Kenneth F. Plumb, Secretary
Federal Energy Regulatory Commission
825 North Capitol Street, N.E.
Washington, DC 20426

Re: Monadnock Paper Mills Hydroelectric Facility,
Contoocook River, Bennington, New Hampshire,
FERC Project No. ~~6597~~

Dear Mr. Plumb:

Enclosed herewith is the State of New Hampshire Water Quality Certificate furnished by the state Water Supply and Pollution Control Commission pursuant to Sections 401(a)(1) and 401(d) of the Federal Water Pollution Control Act (P.L. 92-500; also cited as 33 U.S.C. 1341).

Very truly yours,



Dom S. D'Ambruso

DSD/dsl
Certified Mail
Return Receipt Requested

cc: Erving LeCain, Monadnock Paper Mills
James M. Rea, East Coast Engineering
Fred Springer, FERC
David Cowen, Esquire, FERC

8310310358

ERIC - DOCUMENTS

OCT 28 1983

The State of New Hampshire

COMMISSIONERS

J. WILLCOX BROWN, Chairman
BRUCE A. HOMER, P.E., Vice Chairman
CHARLES S. BARRY
JOHN C. COLLINS, P.E.
DELBERT F. DOWNING
RUSSELL DUMAIS
HERBERT A. FINCHER
RICHARD M. FLYNN
ROBERT B. MONIER
JAMES J. PAGE
WAYNE L. PATENAUDE
RONALD F. POLTAK
WILLIAM T. WALLACE, M.D., M.P.H.



STAFF

WILLIAM A. HEALY, P.E.
Executive Director

DANIEL COLLINS, P.E.
Deputy Executive Director and
Chief Engineer

Water Supply and Pollution Control Commission
Hazen Drive — P.O. Box 95
Concord, N.H. 03301

RECEIVED

OCT 21 1983

RANSMEIER
& SPELLMAN

October 20, 1983

Mr. Don S. D'Ambruso, Esquire
RANSMEIER & SPELLMAN
One Eagle Square, P.O. Box 1378
Concord, New Hampshire 03301

Subject: Monadnock Paper Mills Hydroelectric Facility,
Contocook River, Bennington

Dear Mr. D'Ambruso:

The application for federal license was received
September 29, 1983, and has been reviewed.

This will certify that on review of the subject
request, the Commission has determined that the project
described in the request will be in conformance with appli-
cable New Hampshire laws; and that, to the best of its
knowledge, no Federal limitation applicable to the proposed
project has been established under Section 301(b), 302,
305 or 307 of the Federal Water Pollution Control Act (P.L.
92-500), as amended to date.

This certification is furnished pursuant to Sections
401(a)(1) and 401(d) of the Act.

Very truly yours,

Handwritten signature of Peter H. Allen in cursive script.
Peter H. Allen

PHA/mb

cc: Mr. Delbert F. Downing
N. H. Wetlands Board

Appendix 7-1

MPM self-certification as Maine Class II RPS Eligible March 10, 2014

Steve Hickey

From: Steve Hickey
Sent: Monday, March 10, 2014 2:31 PM
To: James Webb
Cc: Steve Hickey
Subject: Re: Monadnock Paper behind-the-meter assets pending GIS approval

James, they all qualify as ME Class II. Please update their eligibility. The Monadnock Paper Mills Asset also qualified as Maine Class II.

Thank you,
Steve

Sent from my iPhone

On Mar 10, 2014, at 10:59 AM, James Webb <jwebb@apx.com> wrote:

Hi Steve, have these assets been RPS approved in any states yet? Generally I only approve NON assets after RPS eligibility has been granted. This is to avoid the meter reader from uploading data, having RECs issue, but without RPS eligibility. If they are RPS approved, please email over the approvals.

James Webb
408.517.2174
jwebb@apx.com

From: Steve Hickey [<mailto:sjh@essexhydro.com>]
Sent: Saturday, March 08, 2014 1:56 PM
To: James Webb
Subject: Monadnock Paper behind-the-meter assets pending GIS approval

James, the following assets are listed as "pending" in Monadnock Paper's GIS account. Can you please approve them?

NON39419
NON39420
NON39416
NON39417
NON39418

Thank you,
Steve